

REMARKS

An excess claim fee payment letter is submitted herewith for four (4) excess total claims.

Claims 1- 39 are all the claims presently pending in the application. Claims 1-34 have been amended to more particularly define the invention. Claims 5-7 and 11-32 have been withdrawn from consideration. Claims 35-39 have been added to claim additional features of the invention.

Applicant recognizes and appreciates the Examiner's statement that claims 3 and 9 would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims. As noted above, Applicant submits that dependent claims 3 and 9 are now allowable based on their dependency from amended independent claim 1. Therefore, Applicant has not rewritten dependent claims 3 and 9 in independent form.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

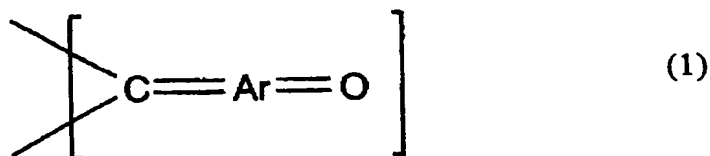
Claims 1-2, 4, 8, and 33-34 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Tobishima et al. "Electrochemical reactivity of aromatic compounds for use in lithium cells" (hereinafter the Tobishima Article). Claims 1-2, 4, 8, and 33-34 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Tobishima et al. (JP No. 56-103871) (hereinafter the Tobishima Patent).

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

The claimed invention (e.g., as defined by claim 1) is directed to a battery containing an organic compound as the active ingredient. The organic compound includes a cyclic

conjugated carbonyl compound. The cyclic conjugated carbonyl compound includes a structural unit expressed by the general formula (1)



Ar is an organic group equivalent to a substituted aromatic compound having carbon number 5 to 14 from which two hydrogen atoms are eliminated.

Conventional lithium ion batteries are used for portable electronic devices, which require large-capacity, small-weight batteries. The lithium battery is a large capacity, stable battery (Application at page 1, lines 14-20). The lithium battery, however, is small in capacity per unit mass. This is because a lithium-containing heavily metal oxide, which is large in specific gravity, is used for the positive electrode of the battery (Application at page 2, lines 1-5).

Other conventional batteries provide positive electrodes made of organic compounds with disulfide linkage. The dissociated disulfide linkages, however, recombine at low efficiency, resulting in less stable batteries (Application at page 2, lines 6-15).

The claimed invention, on the other hand, provides a battery including a cyclic conjugated carbonyl compound having a structural unit expressed by the general formula (1) where Ar is an organic group equivalent to a substituted aromatic compound having carbon number 5 to 14 from which two hydrogen atoms are eliminated. (Application at page 6, first paragraph). This allows the invention to provide a battery that is high in energy density, large in capacity and stable.

II. THE 35 USC §112, SECOND PARAGRAPH REJECTION

Claim 10 stands rejected under 35 U.S.C. §112, second paragraph. Claim 10 has been amended, above, to overcome this rejection. Specifically, claim 10 has been amended to recite, *inter alia*, "in which said structural unit comprises two of said substituents R¹ to R⁴ adjacent to one another and forming a ring structure".

In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw this rejection.

III. THE PRIOR ART REFERENCES

A. The Tobishima Article

The Examiner alleges that the Tobishima Article teaches the claimed invention of claims 1-2, 4, 8 and 33-34. Applicant submits, however, that there are elements of the claimed invention which are neither taught nor suggested by the Tobishima Article.

the Tobishima Article discloses lithium cells having aromatic compounds coupled with lithium. Simple aromatic compounds, Ph_3CH compounds and quinone imine dyes were used. The aromatic compounds are used as active materials in the cathodes of lithium batteries (the Tobishima Article at Abstract).

Contrary to the Examiner's allegations, however, the Tobishima Article does not teach or suggest a cyclic conjugated carbonyl compound having an organic group equivalent to a "substituted aromatic compound having carbon number 5 to 14 from which two hydrogen atoms are eliminated", as recited in amended claim 1.

As noted above, unlike conventional batteries, the claimed invention provides a battery including a cyclic conjugated carbonyl compound having a structural unit expressed by the general formula (1) where Ar is an organic group equivalent to a substituted aromatic compound having carbon number 5 to 14 from which two hydrogen atoms are eliminated. (Application at page 6, first paragraph). This allows the invention to provide a battery that is high in energy density, large in capacity and stable.

Clearly, the novel features of the claimed invention are not taught or suggested by the Tobishima Article. Indeed, the Examiner attempts to rely on page 57 of the abstract of the Tobishima Article to support his allegations. The Examiner, however, is clearly incorrect.

This passage in the Tobishima Article merely describes a lithium cell including a cathode having simple aromatic compounds, Ph_3CH compounds and quinone imine dyes.

However, nowhere in this passage (nor anywhere else for that matter) does Tobishima teach or suggest a cyclic conjugated compound having an organic group equivalent to a

substituted aromatic compound having carbon number 5 to 14 from which two hydrogen atoms are eliminated.

Therefore, Applicant submits that there are elements of the claimed invention that are not taught or suggest by the Tobishima Article. Therefore, the Examiner is respectfully requested to withdraw this rejection.

B. The Tobishima Patent

The Examiner alleges that the Tobishima Patent teaches the claimed invention of claims 1-2, 4, 8 and 33-34. Applicant submits, however, that there are elements of the claimed invention which are neither taught nor suggested by the Tobishima Patent.

the Tobishima Patent discloses a chargeable lithium battery which has a large discharge capacity as well as a high energy density, by employing a triphenylmethane dye as a positive active material of a lithium battery (the Tobishima Patent at Abstract).

Contrary to the Examiner's allegations, however, the Tobishima Patent does not teach or suggest a cyclic conjugated carbonyl compound having an organic group equivalent to a "substituted aromatic compound having carbon number 5 to 14 from which two hydrogen atoms are eliminated", as recited in amended claim 1.

As noted above, unlike conventional batteries, the claimed invention provides a battery including a cyclic conjugated carbonyl compound having a structural unit expressed by the general formula (1) where Ar is an organic group equivalent to a substituted aromatic compound having carbon number 5 to 14 from which two hydrogen atoms are eliminated. (Application at page 6, first paragraph). This allows the invention to provide a battery that is high in energy density, large in capacity and stable.

Clearly, the novel features of the claimed invention are not taught or suggested by the Tobishima Patent. Indeed, the Examiner attempts to rely on the abstract of the Tobishima Patent to support his allegations. The Examiner, however, is clearly incorrect.

This passage merely discloses a lithium battery having a positive electrode with a triphenylmethane dye.

However, nowhere in this passage (nor anywhere else for that matter) does the Tobishima Patent teach or suggest a cyclic conjugated compound having an organic group equivalent to a substituted aromatic compound having carbon number 5 to 14 from which two hydrogen atoms are eliminated. Indeed, Tobishima does not even teach or suggest a substituted aromatic compound.

Therefore, Applicant submits that there are elements of the claimed invention that are not taught or suggest by the Tobishima Patent. Therefore, the Examiner is respectfully requested to withdraw this rejection.

IV. NEW CLAIMS

New claims 35-39 are added to provide more varied protection for the present invention and to claim additional features of the invention. These claims are independently patentable because of the novel features recited therein.

Applicant respectfully submits that new claims 35-39 are patentable over any combination of the applied references at least for the reasons that are analogous to the reasons set forth above with respect to claim 1.

V. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-39, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

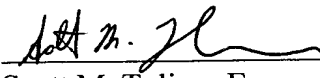
Serial No. 10/021,362
Docket No. N1145-U
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The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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Scott M. Tulino, Esq.
Registration No. 48,317

Sean M. McGinn, Esq.
Registration No. 34,386

McGinn & Gibb, PLLC
Intellectual Property Law
8321 Old Courthouse Road, Suite 200
Vienna, VA 22182-3817
(703) 761-4100
Customer No. 21254